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# BULLETIN OF THE MASSACHUSETTS ARCHAEOLOGICAL SOCIETY

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Douglas S. Byers, Editor, Box 71, Andover, Massachusetts



## INDIAN SOAPSTONE QUARRIES OF WESTERN MASSACHUSETTS

W.J. Howes

### FOREWORD:

Of all the steatite or soapstone quarries of western Massachusetts, only two are known to have been worked by the Indians. One is located in the hills of the western portion of Westfield, the other, off the easterly side of the Glendale road two and one-quarter miles southerly from North Wilbraham.

The Westfield quarry is a natural ledge outcropping of serpentine that probably had several veins of different grades of soapstone. This serpentine ledge was developed commercially for building material a half century ago, removing all evidence of the different veins, save for one which was located near the lower portion of the ledge.

Fragments of the various grades of soapstone and of material that is foreign to the existing vein are found both upon the workshop site and in a refuse dump below. Furthermore, the original contour of this vein seems never to have appreciably changed, and half-picked-out forms and scars of others that have been removed, remain on its oval or rounded surface at the present time. The evidence of breakage in removal of one of the pot-forms due to the longitudinal cleavage planes as well as the coarse texture of the material itself, indicates that the danger of cracking and the difficulty of working the soapstone probably have a strong bearing on the preservation of the outcropping.

At least three types of soapstone were found. As no scientific knowledge is at hand, they will be described as follows, to wit; one contained certain elements that make it coarse and hard, and is characterized by a cleavage that would cause breakage while being worked; another is of a dense and fine-grained texture that makes it ideal to work; and the third is of a fibrous nature. This last one was found only in small quantities. These veins, afore mentioned, were probably the source of the large number of pot forms and fragments found on the workshop site and the dump below.

The Wilbraham quarry, so called, now consists of several surface depressions marking the former sites of boulders that had been transported by glacial ice from an outcropping farther north. The surrounding territory is all of sedimentary deposit, with, here and there, small, scattered boulders of different materials. No ledge outcrops in the immediate vicinity.

Both the condition of the site, and the different type of implements or artifacts found there indicate that it had been worked more extensively and for a much longer time than the site at Westfield. Exploration has produced a considerable number of artifacts and parts of utensils, some of them being almost entirely completed.

The workshop at Westfield occupied a comparatively small space, and it is probable that much of the work was not done at the edge of the outcropping vein. On the other hand, the finds at Wilbraham seem to place the workshop around the rim of the boulders, as a result of which, the working space grew smaller as the boulders diminished in size.

At Westfield, the adjoining outcroppings of quartz and other suitable hard materials were a source of supply for the implements used in quarrying the soapstone and finishing it into utensils. At Wilbraham, the implements were of a more varied type, and were brought to the site from a distance. The absence of quartz was quite noticeable.

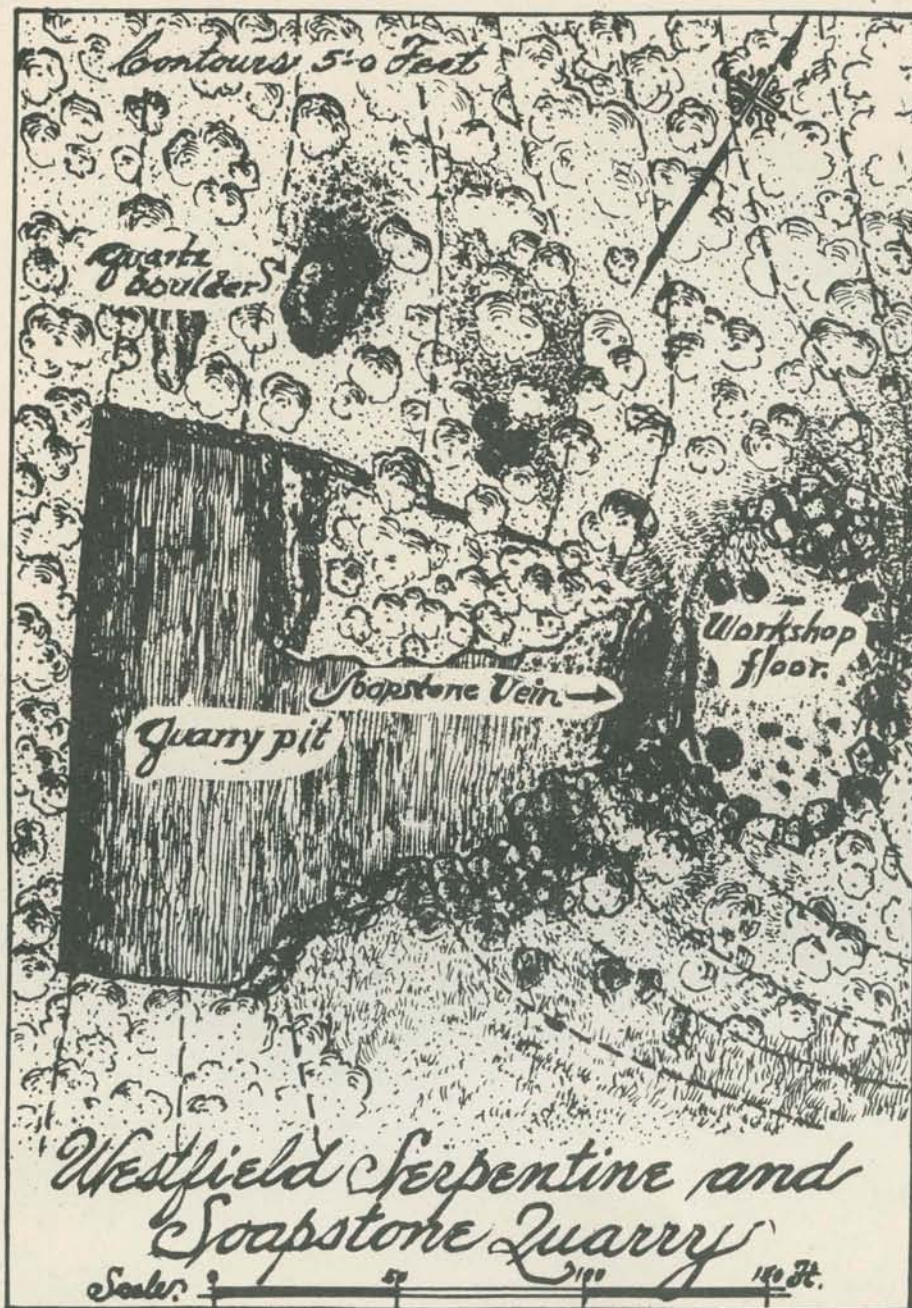
Both of these sites seem to have been situated on thoroughfares of travel. That at Westfield was a matter of one hundred feet up a steep hill, aside the trail at a point where there was no especial attraction to travelers passing over the route. At Wilbraham, the site was located in a valley with a brook adjoining, and probably on open land, adjacent to sites for camps, with spring water at hand. It was quite probable that it was on the thoroughfare from the Thames Valley and Long Island Sound to the Bay Path Trail which ran two or three miles northward at the point where the Chicopee River bends northward on its way to the Connecticut.

### WESTFIELD QUARRY:

In the wooded hills of the westerly section of the city of Westfield several ledges of rock appear as outcrops. On a portion of one, is the abandoned Atwater serpentine quarry. On its lower margin is a small vein of steatite or soapstone that shows Indian craftsmanship in the working of this portion of the ledge for material that they used in making their household utensils.

This serpentine quarry has been given considerable prominence in Benjamin Kendall Emerson's *Geology of Hampshire County*, Monographs of the U.S. Geological Survey of 1898, pages 91-95 in one portion of which





he states that; "The soapstone has been worked by the Indians, half-made pots are still to be seen on the surface, and an Indian arrow was found, in blasting, twelve feet down in a narrow crevice in the limestone."

The quarry is located at an elevation of about one hundred feet above the Old Indian Trail that wound its way up over the mountain westward to the Housatonic Valley, with Little River flowing eastward just below. It had been worked extensively many years ago. There are many discarded blocks of material piled up and strewn around the

lower portion of the margin of the flooded pit, which measures about one hundred and seventy-five feet in each direction.

The soapstone vein, six feet wide and about twenty or more feet long seems intact today save that it has scars where several pot forms have been separated from it; one pot form has been worked around but not removed. One of these scars indicates that the pot had been broken diagonally across during attempts to remove it.

Toward the quarry, all stone had been removed excepting a narrow shelf above the water line. On the opposite or down-hill side there is a groove or trench three feet wide which separates the soapstone vein from a narrow ledge of different material that disappears under the surface.

In cleaning out this trench we recovered quite a number of quarry picks and fragments, most of which were of quartz, and one quartz scraper.

Just below where the ledge disappears underground is a comparatively flat area, about twelve by fifteen feet in size, that was covered with small rocks and debris thrown out in working the quarry. The area available for exploration was limited on one side by the slope of the hill with

its higher terrace of sand, and on the other and lower side, by the piled up blocks of stone. Upon removal of the debris and several inches of surface soil from this area, a layer of soapstone dust from two to five inches thick, and covering a goodly portion of the plot was brought to light. A majority of the implements used in shaping and finishing the utensils were found within this layer. Quite a number of pot forms, some of which were partially outlined and worked, as well as numerous lumps and fragments of discarded soapstone, were also mixed in with other material.

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The implements included many picks of assorted sizes, most of which were of quartz. The majority of them were broken. They were probably made from the material in the boulder found near by. This material was filled with fractures along the planes of which the stone would finally shatter and go to pieces under the impact of many blows. A few of the picks were of basalt or trap rock, which was probably imported from an extension of the Mt. Tom range which appears as an outcrop in the eastern portion of Westfield, several miles away. There were also a few hammerstones, abraders, a large flaked core of quartzite, rough quartz drills, and a small fragment of a pot, the only piece found within this area.

On some fragments of soapstone were faces rubbed down to a smooth surface, indicating that they had been used as polishers for finishing utensils after the picks, scrapers, and abraders had completed their portion of the work, filling the slightly uneven surface and leaving the utensil with a smooth and polished surface.

The abraders seem to have been of two types. The most common was used for grinding away or wearing down purposes, while the other, having a thin rounded edge, might be called a scarifying type. This type was probably used more as a knife for cutting or rubbing deep furrows and criss-cross scorings before scraping or wearing away with a grinding abradar.

Further down the slope, a considerable number of fragments of soapstone and a few broken implements were found in a narrow exploration trench. These, in all probability, were dumped here by the workmen in cleaning the site for the quarry, as the soapstone is of a type different than is now seen in place in the vein. Large discarded blocks of soapstone were thrown out at one side as rejects. Some of these are greatly disintegrated, while on others the upper surface has a vermiculated appearance, which was probably caused by disintegration of soluble elements, to a depth of half an inch or more during their long exposure, leaving the harder substance outstanding.

On a later trip to the site, the exploration trench down hill was widened from its former size, uncovering the richest find of implements and worked sections of different types of utensils that were manufactured here. Among them was a roughed-out ladle or cup which shows clearly its intended form by the pick markings around the outer edges where the surplus material was to have been removed. As the material was greatly disintegrated it was probably discarded when the Indians found by working it that it was of inferior quality, and would break before it was finished. Other objects of this type include a fragment showing the handle of a small spoon, and a ladle form with the handles worked out.

One of the specimens is a fragment from a flat dish or platter, probably of large diameter, and having a thickness of about one and one-half inches. A like fragment of smaller size from the Wilbraham quarry inclines one to believe that dishes or platters of this type had some specific use. The material of which they were made would be ideal for broiling fish or flesh, over a fire. The Indians may have learned and practiced this type of cookery before they acquired a knowledge of boiling in pottery vessels; it would have been suitable for cooking meats, but not for corn or beans. A large scarifying abradar of rectangular form, measuring four by six inches, less than one-half an inch thick at the back and thinner on the worked sides and lower edge, was among the artifacts found. The two bottom corners and all the edges had been rounded for abrading.

Quite a quantity of small soapstone fragments was recovered from this site as well as one chunk that bore every indication of having been roughed out for a pipe; a shallow depression had been started for the bowl.

Two water-worn pieces of quartzite, probably brought to the site from the river below, had large flakes removed from their faces. This suggests that implements were made from them on the site.

On the northerly side of the quarry pit at a higher elevation, is a free-standing boulder mostly of feldspar and quartz in separate sections. The feldspar caps the boulder and has a small sprinkling of rather large muscovite mica spots distributed through it. The feldspar has disintegrated all over its outer surface to a considerable extent, leaving a coating like ashes on the ground below. On the northerly and easterly sides under the feldspar capping is white and translucent quartz in mixture with many fracture seams. An examination of the northerly side of this boulder, at and below the surface line, revealed that it had been worked by the Indians to obtain the implements used in picking away and digging out pot forms from the soapstone veins of the quarry. The surface of the ground around this side of the boulder was covered to a considerable depth with debris consisting of quartz dust, particles and fragments that had been discarded by the Indians in removing raw material for implements used at the soapstone quarry.

At a foot or more below grade, adjoining the quartz boulder, the worked surface of the quartz was exposed, showing clearly the method the Indian used in removing the material for his implements from the bed rock. It seems that advantage was taken of existing cleavage planes in the quartz to break pieces of this away from its bed. When the quartz to be used was freed by breaking some away at either side, the



workmen evidently began to pry off the pieces they desired for their work by wedging. After removal, these pieces were trimmed down to the form of the implement they required.

The material is brittle, and easily broken along cleavage planes. A careful sorting of the debris produced not only refuse, but partially worked implements which had been destroyed in the process of making. These pieces show that the sharp edges of the top and sides of the picks had been blunted, or broken away to make them suitable for grasping in the hand. The pointed end had broken off some of them.

A cache in a pocket adjoining the base of the boulder contained quite a number of small picks, evidently finished and placed there as a reserve supply. These small picks were probably used in digging out the interior of small utensils.

#### WILBRAHAM QUARRY:

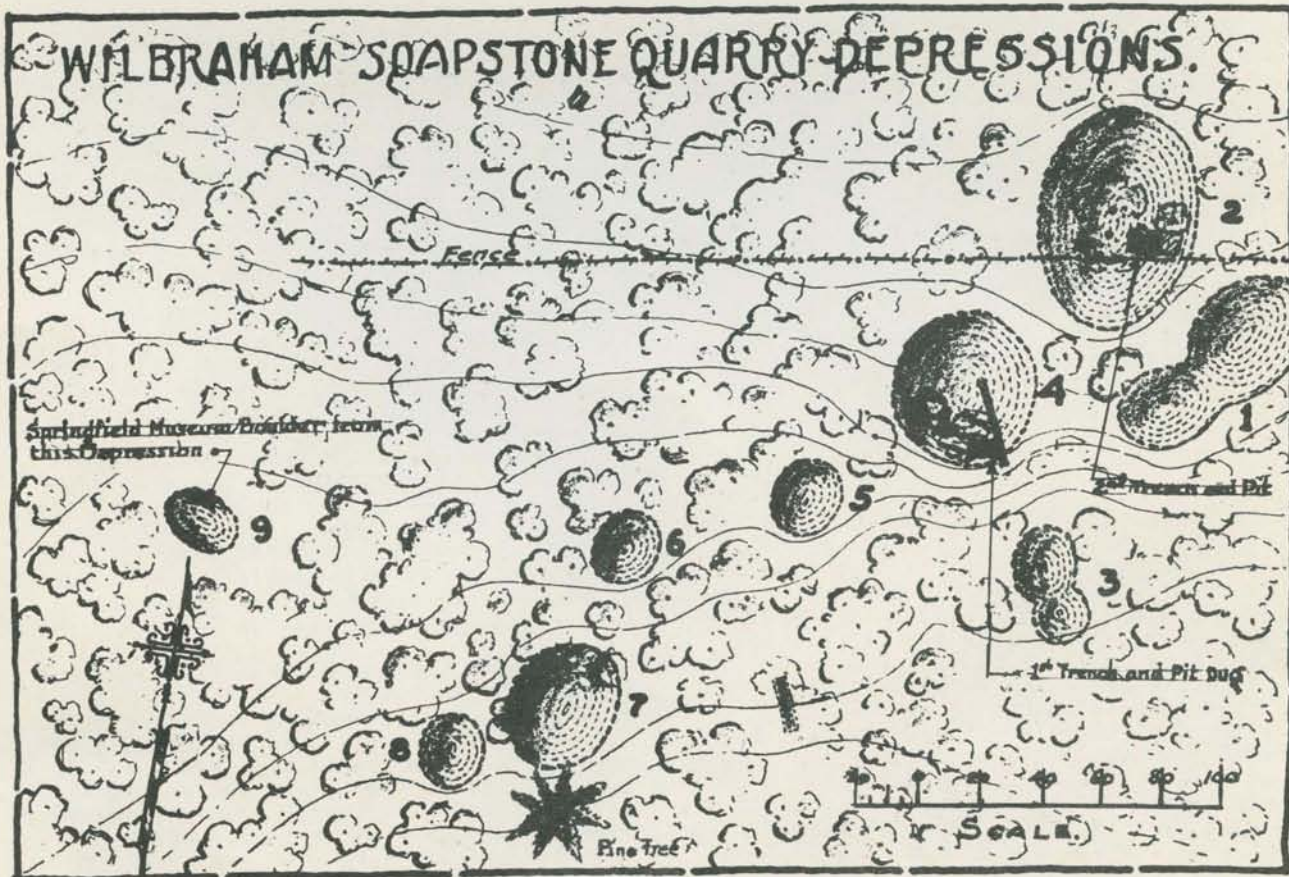
The Wilbraham quarry now consists of several surface depressions where boulders, deposited during the Glacial Period, had formerly lain. They were plucked by ice

from an outcrop farther north, probably in the town of Pelham, the only known outcrop of this rock on the east side of the Connecticut River in western Massachusetts.

These depressions are about a third of a mile down hill from the Glendale road. They pit an area about three hundred and fifty feet long and two hundred feet wide.

Until 1904 there was no general knowledge of this site. Years later, in 1933, the only remaining boulder was removed from the site and is now a central feature of an exhibit in the Springfield Museum of Natural History. During its removal many implements, three bowls, and other items were found. These are all illustrated and described in the Springfield Union of January 2, 1934.

All the other boulders had been cut away and entirely removed from the surface by some prehistoric people in getting out material for their utensils, leaving only deep and wide depressions in the ground, which is now covered with underbrush, an accumulation of vegetal matter, and a healthy young forest growth.



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There are evidences of several of these depressions, all conspicuous by their wide high rims, where material had been thrown out from around the boulders as they were dug out below the surface of the ground. Judging from the size of the depressions, the boulders might have run from six to twenty-five or more feet long, with visible depths of from four to ten feet.

During this last summer several members of the Connecticut Valley Chapter visited the site with the necessary equipment for exploring one of these depressions. A stop was made at the Town Library to look over the various artifacts picked up at the quarry and nearby camp sites. The hasty inspection at once revealed that this small collection was of great importance for study, as it was all from one locality, and seemingly covered a long period of time.

Among the outstanding artifacts was an unperforated fish-tail banner stone, a long slender pendant, several large grooved picks of basalt, probably hafted, and quite rarely found. Also, there were two or three soapstone pots, a wide range of arrow points - some being trianguloids, - drills, and three fragments of obsidian chips, one of which was about three inches long.

The fish-tail banner stone and the long slender pendant might suggest an early occupancy of the territory, and the obsidian flakes, that this section supported an industry that traded local wares for material from the far-off west.

At the site selected for exploration, the surface was first cleared of all underbrush. A long trench two feet wide was then dug from the center of the depression to the rim, using a grub hook and shovel. It was not until eight or more inches of soil and vegetation had been removed that evidences of soapstone and a few broken artifacts were found. The fragments were mostly discarded material, broken off by the Indians during the operation of getting out the pot forms.

After this trench had demonstrated that the field was promising, more explorations at other locations and around the rim of the depression disclosed that it was in this upper portion that most of the material might be found.

Several types of discarded and broken implements, partially worked broken pots or bowls, ladles, dishes and small worked handles that might have been for spoons were found.

Among the implements discovered were many picks of different materials, but mostly of basalt, that were broken off an inch or more above the point; abraders for grinding or wearing away the soapstone surface in finishing the ware; and a chisel, the

only one found so far at this location. The use of several implements of unusual type is problematical.

There was also a stone-handled scari-fying abrader or scraping implement, probably used, in place of a pick, for cutting away the interior of the utensil at times, when the use of a pick might result in breakage. Mixed in with the debris was the poll of a broken ax, that may possibly have been used for preparing a face on which to lay out pot forms; we also found a large hoe blade that may have been used for raking away the debris resulting from cutting pot forms away from the boulder. Such heavy and crude hoes were evidently discarded and thrown out after their usefulness at the quarry had passed.

These various implements, together with large quantities of soapstone dust and portions of utensils that were found, would indicate that in this case it was the custom to finish some of the utensils upon the site, after they had been cut away from the boulder.

Among the finds was a portion of a small, completed, bowl with a button knob on the end; its interior surface was smoothly finished. There was also a shallow dish from the rim of which only a small section was missing; its exterior was practically finished, while the interior showed series of longitudinal furrows left by picks, running lengthwise of the dish. A partly finished spoon was also found.

If we may suggest that the finished article produced at this quarry may have been intended for trade, while those for home use may have been taken away and finished at the local camp sites, we may account for the occurrence at camp sites and quarries of similar types of picks and scrapers.

At a later date it was decided to shift the exploration to an adjoining depression. The work was started at the base of the pit. As soon as the trench was opened down to the fragments, it was found to be as promising as the first. At a depth of about eighteen inches, at the bottom of the depression, a portion of the original boulder was found.

A pocket was dug straight into the embankment for a width of six feet and a similar length. The soil was of the fine sedimentary type characteristic of lake beds, apparently a part of the bed of post-glacial Lake Wilbraham. A generous mixture of soapstone dust gave it a slippery feeling. A long drouth had baked the earth so hard that it was necessary to use picks to remove it. The surface debris, which included fragments of artifacts and soapstone dust, had been mixed with the soil and finally dumped into the pit as a filling, probably when the area around the boulder



was being cleaned up to make way for cutting out pot forms at an adjoining location. Among the debris there were found a large number of broken points and handle ends of picks that did not match, as well as pieces of broken pots that were discarded and thrown aside as worthless.

One pot form had slid down the embankment and had been covered up with the fill, since its position was the same as that of the slope of the depression.

During the excavation at this location two types of soapstone were found. One was of a dense, fine texture that during all the years has shown no appreciable disintegration. This type was found in small quantity only. The other was of a granular nature, like that found in abundance at the adjoining depression where the first work was done. This type became soft and crumbled. Evidently this type must have had an iron content, for freshly crumbled portions of several pieces were composed of rust-covered granules having a purplish glint. Certain parts suggest that in complete disintegration it became a rusty flour or powder that mixed with the soil and made it slippery. One of the broken dishes was made of the same material, as a fresh break, made in removing it from its resting place, showed the same granular rusty glint. Although a careful search was made for the missing part, no fragments were found.

#### SUMMARY:

The remaining evidence at the Westfield quarry and on the only existing boulder from Wilbraham, which is now in the Springfield Museum of Natural History, consists of scars where large pot forms have been removed and where the half-formed pots were in the process of being cut away.

It is quite evident after the removal of the accumulated vegetation of centuries from very small sectors of two depressions at Wilbraham, that the uncovering of the material in even one depression, would yield a considerable amount of information and artifacts. At the Westfield quarry, the huge, discarded blocks of stone, covering portions of the workshop site, and the dump of debris which was cleaned off the ledge itself, in recent operations, probably contain additional information and artifacts.

Large soapstone pots have been found upon camp sites or recovered from burial places, but few utensils of small size such as ladles or cups, spoons, and individual dishes are among the finds. The number of partially worked forms that have been

removed from the small area excavated at the two quarries indicates that there must have been quite a large production of such utensils.

A few pendants, pipe bowls, and paint cups of soapstone are found in collections, but ladles, spoons, and dish-type pieces such as have been recovered on these quarry sites, are seldom found.

Champlain refers to a feast in the north country where the Indians served "migan", a quite liquid food which "they give to each one a portion". Another account says "they take off from the surface, with a spoon, the fat" ... and, "they give and distribute to each one a plateful, with a spoonful of fat." Of another feast he says, (1) "the men set on both sides of the house with his dish made of bark of a tree and when the meat is sodden, there is one which divideth to every man his part in the same dishes." Roger Williams in his *Key Into the Language of America* (2) refers to the interpretation of the Indian words for dish and spoons. All these references to dishes and spoons would seem to indicate that individual dishes and spoons were in common use, and while birch bark was available in the north country, in southern New England where soapstone was found in nearby quarries, it seems reasonable to assume that many of these small dishes, ladles and spoons were in use to some extent, especially in their permanent homes.

To many, the use of some of the working implements that have been found might be considered as questionable, the need for them overlooked, and so they are discarded as broken stones. It was only by actual use that their need was demonstrated. Many of them on first inspection seemed just fragments. The evidences of these broken stones of a foreign type of material found upon their workshop sites, gave them additional importance, and upon closer inspection and experiment to learn their possible use, it was found they were essential implements used in fashioning their utensils.

While there has been a general knowledge of the use of picks, hammerstones, and scrapers, yet it required the actual reproduction of a simple utensil worked by these picked up chips and flakes of different types of broken fragments, to demonstrate the need for them and their suitability for the different kinds of work required. The type of material worked also made the need for them essential.

As the mechanic of today adapts his

(1) Champlain Voyages Vol. II, page 122.

(2) Roger Williams *Key Into the Language of America*, pages 13 and 36.



specialized type of tool to fit both the quality of material and the object he is working upon, it would seem that the Indian, also, in fashioning his utensils used chips, flakes, gritty stones, and even soapstone itself, whichever was best adapted to shape the article he was making, by cutting, scraping, abrading, and polishing to completion.

The abundance of soapstone fragments that had been thrown out at both quarries was examined carefully, and it was found that quite a number of fragments had been worked to some extent. When they were gathered, there seemed to be no question but that they were small dish, ladle, and cup forms. A number had the pointed end worked out for a handle. Others had roughed-out pick furrows for cutting away the surplus material, which gave the finished outline of the intended utensil. Even small as well as large pieces of soapstone were found whose rough fractured surfaces had been worn down and brought to a polish by rubbing over completed pots to bring its surface to a like polish.

While mention has been made in several articles relating to soapstone finds, but little attention has been given to small items that were made of this material. From findings at both Westfield and Wilbraham quarries, it is definitely known that a majority of the worked and partially finished broken utensils are of small size. It seems quite probable that many small articles other than those noted, must have been produced in order to use up the fragments of the fine-textured material so closely. The writer has an upper portion of a small-sized pendant and a half section of a small paint cup with the rim margin scored all round with tally marks. Pipe bowls and fish lures are found in other collections. These artifacts, that were probably made on their camp sites, would account for the absence of fragments of fine-textured material of such size from the quarry sites.

At intervals during the exploration of both the Westfield and Wilbraham sites, cobblestones ranging in size from six inches to the size of one's head were uncovered. They were of varying types of material, waterworn, and irregularly rounded in outline. No visible indications were found of their having been utilized in any manner in the Indian's work of quarrying the material or of producing the ware. They probably were brought from some distance as they were foreign to the location in which they were found. Associated as they were at both quarries with workshop debris, it would seem that there may be some significance in their occurrence on these sites.

Quartz cores from good water-worn cobblestones were found in excavating at both sites. Many flakes for implements must have been taken from them. Two unworked pieces of fine-textured sandstone that was

obtained from some unknown ledge lower down the valley, were found in the dump at the Westfield quarry. They were dense and hard enough to be suitable for quarry picks.

The removal of the debris around the boulder at the Wilbraham site, and from the ledge veins at Westfield required some type of implement for this purpose. At Wilbraham, even on the small sectors that were excavated, a large complete hoe blade and one other whose cutting edge was blunted or broken off, were found among the fragments and broken artifacts. At the Westfield quarry a hoe was found in the dump.

On the surface near one of the depressions at Wilbraham, there was found an unusually long, thin, and straight flake of Munson-type granite, one surface of which is uniformly convex across the long axis, while the other, although in general concave, displays two ridges or bulges running parallel to the long axis. It has all the characteristics of an object made by man rather than a natural flake or a spalled-off fragment from some boulder or ledge. This piece is sixteen inches long and six inches wide. It is not over three-quarters of an inch in thickness. The shape is rectangular except at one end which has been brought to a convex chipped cutting edge. The sides are uniformly straight and are chipped, and the whole surface is not that of a plane since it has a small curvature to both bottom and top. The supposition is that thongs were bound around it in some manner, so it might be used as a scoop in digging out the fine sand which occurs here.

The period of time at which these quarries were in operation has not been determined. Some scientists have associated the soapstone utensils and ornaments with an early culture. It would seem that this was true at both locations. It is, however, quite evident from the artifacts found on the adjacent Wilbraham camp sites, that the late Algonkian Indian must have known of this quarry.

From an afore-mentioned reference to a newspaper account, it is known that less than twenty years ago, the location which was once filled with these soapstone boulders, was open pasture land. The remaining soapstone boulder with its half-worked pot form, as well as the different unusually formed depressions and their wide mounded rims surrounding them that were adjacent to it, were visible for all to see. On the camp sites, up the hill from the quarry, picks and soapstone bowls were found, as well as artifacts and other material that probably date from a later occupancy.

It is doubtful if the late Algonkian Indian had any knowledge of the Westfield soapstone quarry or of the utensils that had been made there. The trail to the west was about a hundred feet below the top of the steep bank to the quarry, and there seems



to have been no particular incentive for this late Indian to deviate from his trail either going to or coming from the west. In fact there might have been no trail at an early period. Furthermore, no known soapstone utensils or ornaments have been found upon camp sites west of the Connecticut River Valley. The production of earthenware locally by this later group was also a reason for not working the quarry, provided they knew of its existence. Also, as a usual thing the late Indian would not use his energy or any effort in such production when earthenware pottery was available nearby.

The removal of soil and workshop litter as the different boulders at the Wilbraham site decreased in size, and around the worked veins at Westfield must have presented quite a problem. From the implements found, both hoe and shovel type implements were used for this purpose.

In general the hoe has been considered as a late date implement associated with agricultural pursuits, yet the hoes that were found mixed with the debris fills at both the Westfield and Wilbraham sites were among the artifacts and fragments uncovered at each location. The scoop shovel referred to, which was found upon the surface adjoining the Springfield Museum boulder, was a logical type of implement for use for this purpose. With further exploration it is quite probable that more definite data may be obtained to help solve this problem.

While these two sites have been opened to a small extent, they are worthy of exhaustive exploration, which probably would contribute considerably to our knowledge of the people that once occupied the territory at an early period.

Holyoke, Massachusetts  
January, 1944

#### NOTES ON THE ARCHAEOLOGY OF LONG ISLAND

Compiled from letters from Carlyle S. Smith

[Carlyle S. Smith, now a sergeant in the Army Air Forces stationed at Greensboro, North Carolina, had carried on archaeological researches on Long Island before his induction into the service. His work on Long Island was interrupted by research in connection with the Statewide Archaeological Survey of Louisiana. Nevertheless, he prepared a paper using the data gathered on Long Island, and submitted it for publication in AMERICAN ANTIQUITY. The paper, entitled "Clues to the Chronology of Coastal New York", will appear in the July, 1944 issue of that journal. In the course of correspondence incidental to the preparation of the manuscript for publication, Smith supplied further information regarding sites and ceramics, writing entirely from memory as he had neither notes nor specimens with him in Greensboro. He has given his permission to the publication of this correspondence, emphasizing that he writes from memory, and that what he says is subject to revision in the light of further researches. Since his material has considerable bearing on problems in Massachusetts, we publish his letters in our BULLETIN. A careful reading of his paper in AMERICAN ANTIQUITY will help to place this information in its proper setting.]

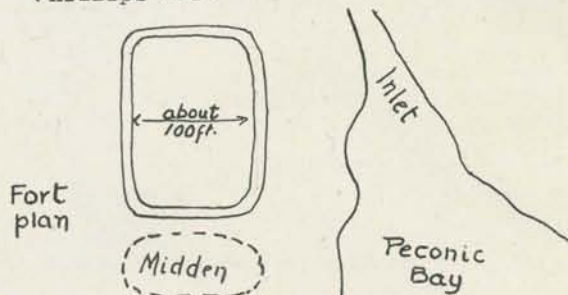
Greensboro, North Carolina  
January 18, 1944

Dear Mr. Byers:

It is a small army after all. One of

my Long Island archaeological associates, Ralph Solecki, just arrived here at camp for training as an aviation cadet. I'll welcome some good archaeological bull sessions after so much army talk. Solecki is a thorough going enthusiast and has excavated all over Long Island on his own. He put in a few seasons in Nebraska with A.T. Hill also. After the war he should be able to contribute a good deal to the data on historic sites. The Cutchogue Site was found by Solecki. I couldn't go into detail in my short paper but it is a very interesting one which could keep a small group of excavators busy all one season. It is a rectangular fortification which is definable only through excavation. The walls consist of a double line of post holes in the form of two narrow trenches.

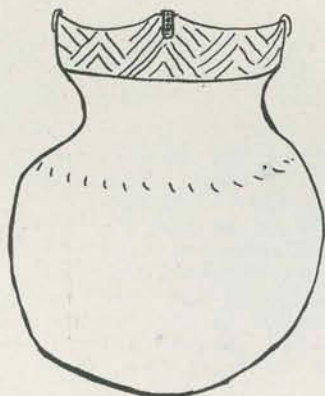
Solecki and I don't have complete historic and legendary data as yet but our hunch is that the site is the one built and occupied by the group of Pequot who came over from New England after King Phillips War.



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Except for the occurrence of the vessels figured by Saville from Easthampton we have seen nothing like the pottery from this site. No other site produces such a uniform and distinctive ware. In one sense it is the most exaggerated development that could come out of the trends shown in my time scale graph of the pottery from western Long Island. All of the material I've seen from other sites on eastern Long Island follows the simple Woodland tradition (the Grantville Period) and is typified by the pottery from Harrington's "Shinnecock" Site. The Cutchogue pottery is aberrant on eastern Long Island and would be surprising even on the western end. Vessels are shell tempered and the surfaces of the sherds are generally buff to black in color with very few of the reddish brown tones found elsewhere. The bottoms are rounded, the bodies globular, the necks constricted, and rims are of the fully developed collar type. Castellations are common and often take the form of fillets applied to the rim and resemble caterpillars crawling over the lip. Incising is the dominant decorative technique. On some vessels the lines seem to have been achieved by impressing the edge with a large "quahog" or *Venus Mercenaria* shell. The shoulders frequently bear a line of shallow punctates.

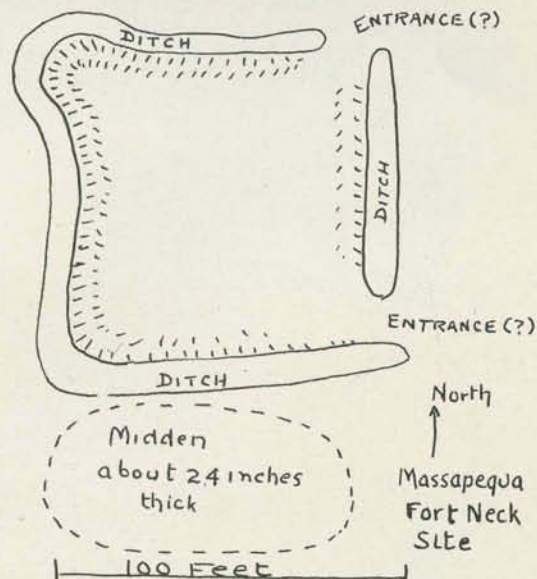


I hesitated to include a detailed analysis of the material because it doesn't fit the east end of the island and is far removed geographically from the group of well known sites on the west end.

We have realized that there is a cultural difference between the east and west ends of the island. The west end seems to have received more tracts from New Jersey and upper New York whereas the east received more from New England.

Incidentally the Cutchogue site didn't produce very many projectile points or other artifacts. Wampum debris is common and so are objects of European origin.

The other fort site on Long Island is at Massapequa. This has an encircling ditch and mound. There is very little pottery. Seventeenth century English clay pipe stems are most common.



The soil inside the fort is sandy and seems to have no occupation layer. All of the material we know of was found in the midden.

I guess I've rambled on long enough but when I get started I find it hard to stop. When the war is over I hope to write my doctorate on the Long Island problems.

Sincerely yours,  
Carlyle S. Smith

Andover, Mass.  
January 22, 1944

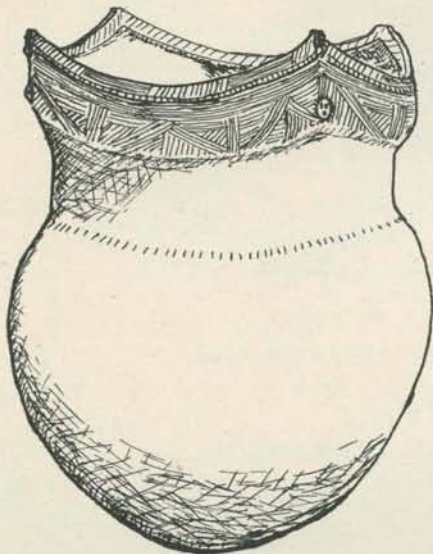
Dear Mr. Smith:

What you have to say about the sites on Long Island is indeed interesting and I am taking the liberty of putting your letter in a file of material about sites. I should dearly like to see a palisaded New England site. We have often heard of them but I have never yet heard or seen one that has been excavated.

Your drawing of the pot from the Cutchogue site is enough to knock me over. Your description of the color, the temper, the body shape and the collar are an absolute fit for a large pot which we have here now on loan and which was discovered [by Jesse Brewer] on the banks of the Cape Cod Canal. The site has now been completely destroyed but I believe that enough material exists in surface collections to make an analysis possible. There is one man in particular in Plymouth who has quite a bit from this one site. I think



that we can use that material for study and that we might be able to do something along the lines of comparative work with your Long Island site. If I remember, this large pot of which I enclose a rough sketch was found in a pit with a lemon bottomed cord marked pot. Harry Hornblower reminds me that there were black daubs of what appeared to be paint on this second pot.



I have just shown your letter to Fred Johnson since he is so tremendously interested in this material. He has made a suggestion which I am passing on. Would you give us permission to run your letter in the Bulletin of the Massachusetts Archaeological Society? I naturally do not refer to the matter connected with the paper for AMERICAN ANTIQUITY but what you have to say about the Cutchogue site and the pottery is certainly worth recording.

With very best,

As ever,  
Douglas S. Byers

Greensboro, North Carolina  
January 24, 1944

Dear Mr. Byers:

It is perfectly all right for you to use my last letter for publication. I would have liked to write an article on the site but it is hardly worthwhile without the material before me. As long as it is published as "from memory" it will excuse any changes in interpretation which may occur when all of the material is studied in detail.

The vessel you describe is close to the Cutchogue material in all but the actual design incised and punctated on the rim. We have one sherd from the Wilkins Site (Grantville Period) which has the punctate faces on it but it is a straight rim on a Woodland vessel. The design made up of the incised lines is closest to the material from the Finch Rock House near Armonk, N.Y. Generally speaking, the Iroquoian design on Long Island pottery is less intricate. The incising on the Cutchogue pottery is much bolder and consists of larger diagonal and vertical motifs.

I remember reading a short article, possibly a paragraph or two in length published in the mimeographed series of the Connecticut Archaeological Society two or three years back. Someone was describing a supposedly Mohegan site and referred to Iroquoian type pottery with shell temper. It might be worth looking up.

The account of the Pequot migration to Long Island came from a linguistic study of the Mohegan and Pequot by Leslie Spier. It is in an Annual Report of the Bureau of American Ethnology I think 1925 or 1927. With a little research on your side of the Sound we may be able to demonstrate that the Cutchogue site is Pequot. I don't recall the source but there is an historic reference to the Cutchogue site. It was seen by an English or Dutch explorer who anchored in the inlet from Peconic Bay about 1645.

Speaking of documentation we have a description of the house type for eastern Long Island in 1524. Verrazano described dome shaped huts thatched with grass. The region seems to be the one occupied by either the Shinnecock or the Montauk. In the 1600's on western Long Island the dome shaped bark house and the Iroquois long bark house were in use. This last is well documented and described for the vicinity of Canarsie on Sheepshead Bay.

Speaking of the Sheepshead Bay region: we find large argillite blades all over the surface there. We don't have very much pottery but what there is isn't out of the ordinary. We also have about three-quarters of a large ground stone semi-lunar knife from Maspeth. It was found on the surface, unfortunately.

For a region so close to a large city and thoroughly "suburbanized" it is surprising what a fertile field there is on Long Island.

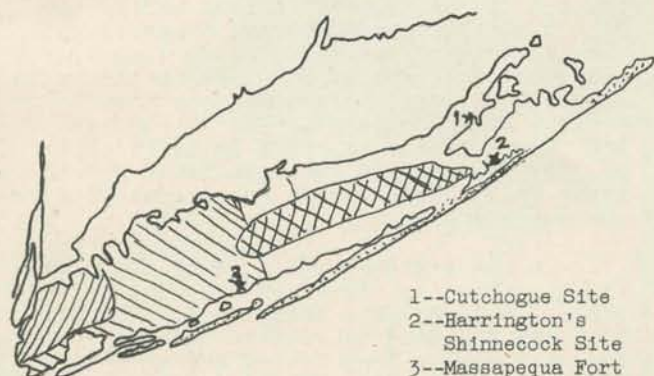
Most of the undisturbed sites occur in the blank and cross hatched areas. I really shouldn't say in the cross hatched area because we know little about it. Where some streams lead out of it there may be some sites but the rest of it offers little now to attract habitation and probably

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wouldn't have attracted the Indians either because it is so dry.

The most intensive work we have done is on the western end out of convenience. Actually we have located over 70 sites on the island and most of them are on the western end. About 20 are in Suffolk County (east). Sites vary from merely finding evidence of a site destroyed when a house was built to completely virgin middens.



- 1--Cutchogue Site  
2--Harrington's  
Shinnecock Site  
3--Massapequa Fort

▨ = Urban ▨ = Suburban. □ = Farms and Villages

▨ = Dense scrub oak wilderness ▨ = Sand dunes

Getting back to your Cape Cod Canal pot. The relationship to the Cutchogue material is marked; it is only the incised design itself which does not fit. The same punctates on the shoulder ties it in well along with the shape, temper and color.

When I wrote my article I hoped it would do two things. I hoped it would con-

tribute a concrete base for further work in the region and I hoped it would inspire others who have access to coastal pottery to analyze the material in the same simple way so we would have some comparable data to work with.

You may have wondered why I didn't separate the rim sherds and give percentages on them separate from the body sherds. I tried this and gave up for two reasons. One, there were too few rim sherds to work with and, two, Woodland vessels often have the design running well down on the shoulder. I knew that cord-wrapped-stick for example was not a body treatment but I could not call a neck or shoulder sherd a rim sherd. Disregarding the point of origin of the sherd seems to solve the problem.

The eight sites were not selected so that I would have a nice smooth graph. They represent the only sites on the west end that I could get enough material from. It surprised me how well they all lined up. More sites might upset it a little but there seems to be no doubt as to the ceramic traits of the two periods. I omitted one site (Crab Meadow Site) because I believe it is stratified and the material was collected long ago by one of my associates before he knew of the necessity for vertical provenience data. The latter site has true collars, flaring rims and straight rims but no incipient collars and little or no scallop shell stamping. The typical incipient collar with scallop shell stamping is missing. This may indicate a break in the early part of the Glasons Point period. There was 75% shell temper at the site.

I guess I've written enough for now. I may think of more to write about later.

Sincerely yours,  
Carlyle S. Smith

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The Pre-Iroquoian Occupations of New York State. William A. Ritchie.

(Rochester Museum Memoir, No.1. xvii, 416 pp., inc. 53 pp. trait tables, 165 plates, maps, 6 fig. in text, Rochester Museum of Arts and Sciences, Rochester, New York, 1944.)

This long-awaited book summarizes and synthesizes the archaeological investigations in New York State, except for Iroquoian sites, up to the date of publication. While a great deal of the material has appeared in monographs, much that is new, or has been only hinted at before, is here presented for the first time. The author is to be congratulated for combining together in one publication all of the pertinent data.

The archaeological literature for the State of New York is rather extensive and the general student will find this book, with its excellent index, an entirely satisfactory substitute for the original reports. The meticulous specialist will find that Ritchie has most skillfully condensed the data for over fifty sites and that, except for the early work around New York City (Mercer, Harrington, and Skinner) and that of Butler on the middle Hudson (largely unpublished), which Ritchie has treated in a most summary manner, little is to be gained by going to the original sources.

Due to the exigencies of the war the book has been produced by photo-lithography. The illustrations are not as clear as printed ones but are entirely usable. This seems to be a slight sacrifice for archaeology to make to the war effort. For ready reference the book would have been improved if the running head had been maintained upon the recto page even when that page carries an illustration. In view of the lack of chapter headings this becomes an important point in the ease of using the book.

A list of "ERRATA" is pasted on one of the fly leaves. Readers will also wish to add two corrections in the table on page 46. Chipped Stone, Castle Creek, should read 58.3% (instead of 85.3%); Bone and Antler, Canandaigua should read 73.8% (instead of 37.8%).

Ritchie's main thesis is that prehistoric time in New York State may be divided into three major periods, each of which may be further divided into cultural entities (archaeologically defined) having chronological implications. In forming these cultural entities, the Mid-Western Taxonomic System has been used to combine sites (components) into foci, foci into aspects, etc. Stratigraphy and typology have been used in working out the chronological position.

The resultant conceptualization, omitting the southeastern portion of the State, is as follows: an Archaic Period, consisting of the Lamoka Focus, to which the succeeding Laurentian Aspect is connected by one site, Frontenac Island; an Intermediate Period, devoted to the colonial extensions of the Ohio mound builder cultures, comprized of the two foci of the Vine Valley Aspect, Middlesex followed by Point Peninsula, with Hopewellian interspersed between them to the west; a Late Prehistoric Period composed of the Owasco Aspect in which is included an earlier Canandaigua Focus followed by the later Castle Creek Focus and changing into prehistoric Iroquois.

In the southeastern part of the State the situation is presented somewhat differently. Here Ritchie suggests that Laurentian was followed in Archaic times by an Orient Focus on Long Island and an "Early" Focus of the Coastal Aspect in the Hudson and eastern Mohawk River Valleys. In the Late Prehistoric Period this Coastal Aspect withdraws from the upper Hudson River but continues in the south where it is found as a "Late" Focus of the Coastal Aspect continuing into early Historic times. The latter Ritchie correlates with historic Algonkian.

This scheme is essentially the same as that proposed by Ritchie in 1938 (1) but it has some significant changes. Brewerton and the Laurentian Aspect have been taken out of the Woodland Pattern and put into the Archaic along with Lamoka. In various ways the classificatory system has been made less rigid, particularly in the upper brackets.

In presenting the data, Ritchie proceeds from the present backwards in time. Beginning with a short but adequate discussion of the Iroquois and Algonkian problems he takes up each focus and aspect in turn. Each is defined and discussed, the components are described, the specimens illustrated, stratigraphy (when present) explained, craniometric data given, and maps presented showing the location of components and the distribution of the material as found in surface collections.

It will be seen from the above that the book is a very ambitious undertaking. A thorough and painstaking job has been done but there are many statements in the book

(1) Ritchie, William A., "A Perspective of Northeastern Archaeology", AMERICAN ANTIQUITY, Vol. IV, No.2, pp. 94-112.



that many people may find debatable. Perhaps that is unavoidable in as comprehensive a book as this.

For stratigraphy Ritchie offers Owasco over Point Peninsula at Jack's Reef, Point Peninsula over Frontenac at Frontenac Island, Point Peninsula over Lamoka at Vinette, a percentage shift from predominately Lamoka to predominately Laurentian at Frontenac Island, and "Late" Coastal over "Early" Coastal at Cruger's Island.

While sometimes the evidence may be considered slight, all of these cases appear to be acceptable as documenting, fairly well, the general sequence for central New York State. It will be noticed that there is no clue as to the temporal relationship between Coastal and any of the other divisions. These relationships are of the utmost importance to northeastern archaeology, as implicit in them is the question of the diffusion of agriculture. Ritchie's postulated long duration for the Coastal Aspect, while quite likely correct, does not seem to be based on any factual information other than the lack in the southeastern part of the State of material which he has assigned to other cultural units.

Ritchie clothes his typology in rather general terms which is probably satisfactory, but a more rigid typological system would have added more substance to the taxonomic skeleton. It would also seem desirable to group the pottery into definable wares. In the text this has been suggested but in the trait tables the breakdown is complete, expressing only the presence or absence of many minor points. A more meaningful presentation would seem to have resulted from a count of the number of sherds of various wares.

In this connection, the size of temper is never given. This may seem like a very minor point but with the discovery of fiber tempered pottery in Massachusetts (2) one wonders if that listed under "Methods of manufacture" as "Paddle and anvil(?) (ware has laminated structure)" could be fiber tempered. If it has extremely fine mineral temper that description would suggest fiber tempering.

While frequently clothed in unsupported generalities, Ritchie's handling of the Owasco-Iroquois relationships, during which he suggests that Castle Creek may be evolving proto-Iroquoian, is extremely well done. His conclusion that "Iroquois influence came not as a sudden flood but gradually" may not agree with the older views but is undoubtedly nearer the truth.

As the Coastal Aspect may prove to be

the most important of the New York cultures as far as New England is concerned (if agriculture entered via the littoral instead of across New York State) it is disappointing to find only ten pages devoted to it. However, we in New England are very indebted to Ritchie for those ten pages as they give us for the first time some visual representation as to what he means by Coastal and what is to be found in the eastern Mohawk and Hudson River Valleys. Ritchie secured a great deal of this information from various archaeological societies. It is to be regretted that he did not see his way clear to carry the work a step further and include lists giving the relative frequencies. This would have substantially increased the value of this part of the book. It is to be sincerely hoped that the Van Epps-Hartley Chapter of the New York State Archaeological Association will rush into print the moment the war is over.

The reviewer professes to see typological similarities between the chipped implements from the Schermerhorn site, p.107, classed as "Early" Coastal and the Canandaigua Focus of Owasco, p. 55, as well as between the upper level at Lamoka, called "Early" Coastal, p. 111, and Vine Valley material, p. 127. While this is not surprising as Ritchie visualizes "Early" Coastal as lasting about 500 years it suggests some interrelationships which might reward investigation. Possibly Ritchie did not feel able to discuss these matters until the material collected by the Vassar Survey as well as that in the possession of the Van Epps-Hartley Chapter has been published.

Ritchie devotes 115 pages, representing well over a third of the text and illustrations, to the three New York manifestations of various Ohio mound cultures. This is certainly the most spectacular period in the prehistory of New York State and Ritchie has substantially increased our knowledge of it. One wonders, however, how great its importance is in the overall picture. From the distribution maps it is evident that no one of these foci covered the whole state at any one time. Are we to assume that the rest of the state was void of human occupation? Ritchie implies this by not referring to the presence of proto-Owasco or Laurentian carryovers, although he does mention "the postulated amalgamation" of Hopewellian bands "with locally resident early Woodland people". He gives no suggestion as to whom these "early Woodland people" might be. The point is that some sites, either Owasco or Laurentian or Lamoka (if Coastal did not extend to the west) must be actually "Intermediate Period" in time and Ritchie presents an oversimplification by omitting a discussion of this fact.

(2) Bullen, R.P. and Hofmann, A.M., "The Hofmann Site," Mss. prepared for AMERICAN ANTIQUITY.

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Incidentally, one notices the omission in the bibliography of Howes' article on "The Problematical Thin Shell Stone Tubes" (3) which includes illustrations of the contents of some of the Middlesex graves at Holyoke, Mass. The inclusion of this would have permitted the checking of three additional traits for the Holyoke Component of the Middlesex Focus in the trait list.

After these 233 pages of excellent and thoughtful work this reviewer was struck with the difference in the next thirty pages covering the Laurentian Aspect. This aspect does not seem to hold together as well as the others. Possibly this is because of the larger geographical area involved, possibly the comparison should be on the "Phase" instead of the "Aspect" level.

The term "participating agencies" in the first paragraph, p. 235, sounds a little strong for the delineation of such a controversial conceptualization as the Laurentian Aspect. Its connotations of approval can hardly be borne out as long as the material from the Nevin Shell Heap, Blue Hill, Maine has been neither published or studied.

In setting up the Laurentian Aspect, Ritchie postulates three or four foci as follows: Brewerton consisting of two large sites, Robinson and Oberlander, plus two small sites all in central New York State, Vosburg consisting of eight surface sites in eastern New York, Vergennes in Vermont, and possibly the Nevin site at Blue Hill, a shell heap site in Maine in which "Red Paint" burials as well as pottery were found.

Obviously to have any validity as an "aspect" these sites must have recognizable traits in common. Also it would seem logical that as Robinson and Oberlander are the large sites, from which the classification started, the diagnostics should be fairly prominent there.

Ritchie offers a trait table for Brewerton Focus (Robinson and Oberlander) but none for the combining of this with the other sites to form the aspect. Instead he handles it in general terms not readily susceptible to analysis. However, in discussing the geographical distribution of the Brewerton complex, Ritchie writes, p. 246 "Here (to the northeast) occur sites linked to the Brewerton Focus by a differential number of the positive and negative elements enumerated for the latter. The gouge, bannerstone, and broadbladed point persistently appear; the plummet is nearly as universal; and the ulo and ground slate point are frequently encountered." It would

appear that these six artifact types, or at least a majority of them, should be present in some quantity in any respectable Laurentian site.

To bring out the argument less any superfluous verbiage the reviewer made up the following chart from the book.

	Banner-bladed Gouges stones		Broad- point	Ground slate points	Plum- mets	U- los
Robinson	26	6	x	1	-	-
Oberlander	10	1	x	-	2	1
Vosburg	x	x	x	-	x	x
Vergennes	7	3	x	2 (frag)	-	9

x means present

- means absent

When Ritchie compares the "utilitarian goods" and "bone and antler devices" from the Nevin shell heap (which contained "Red Paint" material) and says, "Considering this more complete complement, the Red Paint complex reveals fundamental affinities with the assemblage at Brewerton and on the (other) stations", p. 253, he seems to be flying in the face of logic and throwing discretion aside. Certainly the uniformity he sees in the bone work is not borne out by the frequencies of the polished stone types he picked out as diagnostic.

The only real "Red Paint" diagnostic in the above table is the ground slate point (combining the knife or spear point and the bayonet point) which it will be noticed has the poorest representation of any item. Plummets are common in "Red Paint" but not in Laurentian, judging from the above table. Gouges are common in "Red Paint" graves but, as Ritchie says, p. 250, are predominantly long and slender while those from the above foci are short and broad, with the exception of one from Oberlander (Pl. 116, fig. 15) which is a good "Red Paint" type. Bannerstones are found all over the eastern United States but are extremely rare in "Red Paint" while ulos are found from New Jersey, at least, northward (and in China) but never, as far as the reviewer is aware, in "Red Paint" graves. Ground slate and "Red Paint" are not synonymous.

It is to be regretted that Ritchie's otherwise conservative book has been marred by a too enthusiastic adventure into classificatory assemblages based on typology which is not strict enough. If this reviewer were to make a guess he would be inclined to suggest that "Red Paint" might, in the New York State terminology, be more

(3) Howes, W.J., "The Problematical Thin Shell Stone Tubes", BULLETIN of the Massachusetts Archaeological Society, Boston, Mass., Vol. III, No. 2, January, 1942.



apt to be Intermediate than Archaic in date.

Ritchie suggests that the Nevin shell heap at Blue Hill, Maine, represents the "first" recognized "Red Paint" habitation site. Purely in the interests of accuracy it should be recorded that W.B. Smith claimed that distinction some years ago for the Eddington Bend village site on the Penobscot River. (4, 5)

The description of the Frontenac Island site is fine. The illustrations of the Frontenac burials are some of the best in the book. The description of the Lamoka Lake site leaves something to be desired. This site was published in 1932 but deserves more treatment than is given.

These two sites, together with the Laurentian Aspect have been combined to make up the Archaic Pattern. One cannot help wondering what makes them Archaic in the Ford and Willey sense. As their material is not particularly close typologically to that from the southeastern Archaic the classification is presumably based on the premise that Lamoka is pre-agricultural. Lamoka Lake was a big site of about three acres (big for the northeast) with a general thickness of debris of three to four feet. As the amount of shell, found only in the superior layers, does not seem sufficient to support the apparently large population the possibility of agriculture should be considered.

A rather wide range of mortars and mullers as well as choppers were found. The mortars and mullers are disposed of as grinding equipment for reducing nuts, etc., as only charred nuts, etc., but no charred corn, were found. This is, of course, a perfectly reasonable argument but what about the choppers? As far as the reviewer can find out the only difference between a hoe and a chopper is one of size. According to the illustrations, the Owasco hoes are 6 2/3 inches long, at Brewerton the choppers are from 3 1/4 to 5 1/4 inches, at Frontenac they are 4 1/2 and 5 inches, and at Lamoka Lake 4 1/2 inches in length. At what point does a hoe become too short to be an agricultural implement? And for what were choppers used if not for digging in the ground? They would not seem particularly serviceable for chopping up meat. How can one deny horticulture with an abundance of tools which in other complexes are considered agricultural?

In his "comparisons and conclusions" Ritchie is probably right in pointing out

that the Archaic of Ford and Willey may have originally progressed from north to south. It does not follow, however, that Lamoka, because it is classed as an Archaic site is representative of early Archaic. After all archaeological work is based on sampling. Because two Point Peninsula components are later than two Archaic components does not demonstrate that all the Lamoka and Laurentian people had disappeared by that time. Possibly some of them were still pursuing their old way of life in Owasco times. The new dolicocephalic Owasco physical type, that Ritchie points out is not a survivor of the brachycephalic Point Peninsula people, may represent the re-emergence of the Archaic dolicocephals.

Ritchie may be restricted by the limitations of the taxonomic approach. Having determined that one site is Archaic and relatively old, then any other site with the same inventory, or 50% of it, must be classified as Archaic and by implication is also old. While recognizing this danger, the reviewer does not feel that this is necessarily the only result from using taxonomy. If Ritchie had presented his data starting with the oldest and coming up to date, instead of the reverse, it would seem that the problem of culture dynamics would have been brought more forcibly to his attention. With such a wealth of material it is unfortunate not to find human beings between the covers of the book. Artifacts are of importance only in so far as they illuminate the actions and reactions of human beings. They have a human story to tell as well as a classificatory one. Ritchie handles this side of the picture well in the case of the Owasco Aspect. It is to be regretted that he did not use the same method in dealing with the Archaic Pattern.

In the Tentative Culture Sequence chart p. 10, dotted lines are drawn between cultures to show relationships. It is true that they are headed with arrows at each end suggesting interchange or mutuality of influence, but the wording in practically all cases gives the influence of the technically more advanced on the other. Also, while a heritage from Lamoka into the Coastal and so into the Historic Algonkian is implied, there is no such suggestion for the Owasco. Doesn't it have roots in the Archaic also?

Ritchie's "The Pre-Iroquoian Occupation of New York State" is a very stimulating book. It presents a vast amount of factual information put together into a conceptual scheme. The author claims nothing

(4) Smith, Walter B., Indian Remains of the Penobscot Valley and Their Significance, pp. 58-84, University of Maine Studies, Second Series, No.7. Orono, Maine, 1926.

(5) Moorehead, Warren K., A Report on the Archaeology of Maine, pp. 134-141, Department of Archaeology, Phillips Academy, Andover, Mass., 1922.



for the permanency of his structure. While the reviewer has seen fit to take issue on some points, it must be remembered that that is why books are written and reviewed. It is a necessary process if we are to have progress. As this book is and will continue for some years to be the most important

book in northeastern archaeology, it has to be looked at carefully and critically.

Ripley P. Bullen  
Andover, Massachusetts  
May 10, 1944

#### A POSSIBLE EXPLANATION OF "FIRE-BEDS" OR HEARTHES

Douglas S. Byers

In the archaeological literature there are many references to fire-burned stones which have been found on Indian camp sites. In some cases there are not many stones, but it is also true that in other cases there are so many stones scattered through the soil that it is impossible to explain them as stones used for boiling, if indeed stone boiling was practiced commonly in central and southern New England. In the First Archaeological Conference on the Woodland Pattern, reported in American Antiquity, Vol. 8, p.393, it is noted that "(b) A phenomenon locally termed 'fire-beds' appears to occur only in New York and New England" (page 398).

A possible explanation of some of these beds is offered by Roger Williams in his A Key Into the Language of America. On page 197 of the 1936 edition, reprinted at Providence for The Rhode Island and Providence Plantations Tercentenary Committee we find the following passage.

"Pesuponck. An Hot-house.  
Npesuppaumen. I goe to sweate.  
Pesuppauog. They are sweating.

Obs. This Hot-house is a kind of little Cell or Cave, six or eight foot over, round, made on the side of a hill (commonly by some Rivulet or Brooke) into this frequently the men enter after they have exceedingly heated it with store of wood laid upon an heape of stones in the midle. When they have taken out the fire, the stones keepe still a great heat: Ten twelve, twenty more or lesse, enter at once starke naked, leaving their coats, small breeches (or aprons) at the doore, with one to keepe all: here doe they sit round these hot stones an hour or more, taking Tobacco, discoursing, and sweating

together; which sweating they use for two ends: First to cleanse their skin: Secondly, to purge their bodies, which doubtlesse is a great meanes of preserving them, and recovering them from diseases, especially from the French disease, which by sweating and some potions, they perfectly and speedily cure: when they come forth (which is matter of admiration) I have seene them runne (Summer and Winter) into the Brooks to coole them, without the least hurt."

Let us turn to An Analysis of Coastal Algonquian Culture, by Regina Flannery, Catholic University of America, Anthropological Series, No.7. Here we find that the sweat lodge is reported from Newfoundland to Carolina, and westward to the Onondaga and Huron. It has been reported from the Penobscot by Gyles, from New England by Josselyn, Mather, and Williams, and from New Netherlands by Van der Donck. It is also known from the Iroquoian tribes: Parker reports it for the Seneca; DeQuens, for the Onondaga, and Champlain and Sagard, for the Huron.

It would seem that such references might give the clue to hearths or fire-beds such as those which Hofmann has found at Ballardvale.

Andover, Massachusetts  
June, 1944